DOCUMENT RESUME

ED 367 192 FL 800 712

AUTHOR Griffin, Suzanne M.
TITLE Interpreting Assessment Scores of Nonliterate Learners with Ethnographic Data.
PUB DATE 16 Apr 93
NOTE 44p.; Paper presented at the Annual International Meeting of the Teachers of English to Speakers of Other Languages (27th, Atlanta, GA, April 13-17, 1993).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Cross Cultural Studies; Cultural Differences; English (Second Language); *Ethnography; *Illiteracy; *Language Tests; Literacy; *Research Methodology; Scores; Test Interpretation; *Test Results; *Test Validity

ABSTRACT

Research findings are reported that suggest that valid interpretation of assessment scores on illiterate and preliterate learners requires the use of ethnographic data. Data from observation notes, photos, and audiotapes indicated that learners' understanding of their tasks affected their performance in assessment situations. Previous findings from studies involving English-as-a-Second-Language (ESL) learning suggests the need to combine qualitative and quantitative research methods. The following recommendations are offered for procedures in cross-cultural educational research: (1) supplement written information about the subjects' culture with interviews with cultural informants and participant observations; (2) conduct a pilot study with individuals from the target culture; (3) determine how subjects view their participation in the study and anticipate a high number of noncompleters; (4) check the reliability of translators' messages to subjects; (5) accommodate cultural patterns in procedures; (6) verify subjects' familiarity with media used in the study; and (7) contextualize quantifiable outcomes with the ethnographic data collected during the study. Future directions for research on ESL literacy are noted. Appended materials include tables displaying quantitative data, a sample of translated documents (post-instruction interview), sample observation notes, and a sample drawing. Contains 142 references. (Adjunct ERIC Clearinghouse on Literacy Education) (LB)

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ED 367 192

Interpreting Assessment Scores of Nonliterate Learners with Ethnographic Data

Research Special Interest Section
Teachers of English to Speakers of Other Languages

Twenty-seventh Annual International TESOL Convention

Atlanta, Georgia

April 16, 1993

by

Suzanne M. Griffin, Ph.D.
Office of Adult Literacy
State Board for Community and Technical Colleges
Olympia, Washington

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INTERPRETING ASSESSMENT SCORES OF NONLITERATE LEARNERS WITH ETHNOGRAPHIC DATA

Abstract

This paper presents research findings which indicate that valid interpretation of assessment scores on illiterate and preliterate learners requires the use of ethnographic data. Data from observation notes, photos, and audio tapes indicate that learners' understanding of their tasks affected their performance in assessment situations.

Introduction

Each year, hundreds of research studies are published which use English as a second language students as subjects. Data reported on the subjects' performances ultimately inform evolving theories that guide second language instruction.

Because of the potential impact of our studies on pedagogy, researchers must be certain that the data we collect are valid representations of subjects' performances. Some questions that might guide us in this endeavor are the following:

1. How familiar are our subjects with schooling traditions inherent in our research procedures?

2. Do the research methods we are using fairly assess our subjects' performances on second language tasks?

3. What steps have we taken to ensure that subjects in our research studies understand their tasks?

4. How do know whether the materials used in our studies impede or facilitate subjects' performances?

5. What do we know about the culture(s) of our subjects which may affect their performance as learners?

6. How do we counterbalance our cultural biases when we observe and interpret our subjects' behaviors?

7. From whom do we seek guidance to ensure that our procedures are sensitive and appropriate to the cultures of our subjects?

8. How cautious are we in interpreting results of our studies?

9. How much do we sensitize our colleagues to the influence of culture on subjects' performances in learning situations?

Information about subjects' culture(s)

These questions suggest that our preparation for ESL research projects must include some knowledge of the schema which our subjects bring to the task at hand. Such information necessarily includes general knowledge of the culture(s) of the students who will serve as subjects, as well as analysis of ways in which procedures we plan to use are compatible with or in opposition to subjects' dominant cultural patterns. The most common cultural conflict is between the requirement for individual performances without the opportunity to consult other learners from subjects' whose culture(s) value collaboration and consultation. If we are not familiar with the culture(s) of the subjects in our research, we need to seek the assistance of cultural informants and/or read about cultural behavior patterns.

When a multi-cultural ESL class constitutes our subject pool, this preparation activity becomes time-consuming and complex. However, findings from cross cultural studies such as those by Pettersen (1984), Cibrowski (1980), Triandis and Berry, Jahoda (1980), Pick and Pick (1978), and indicate that we can make serious errors in interpreting data from subjects from different cultures if we do not have this information.

How many times have we reported data from an ESL class by their proficiency level without noting the variety of cultures represented within that class? Findings by Hvitfeldt (1985) and Holloway (1990) regarding Hmong and Mien students' misinterpretation of two dimensional drawings (see Appendix A-4) indicate that we need to be particularly cautious in interpreting studies which use visual media.

The presence of a reliable, bilingual cultural informant throughout the study ensures that materials and tasks in the research project are understood by the subjects, and that we, as principal investigators, are alerted to materials and/or procedures which are causing stress or conflicting with subjects' cultures in ways serious enough to affect the validity of the data.

Ethnographic data

One way of ensuring that our research data are accurate is to get a complete description of the context of the research situation. This includes collecting observation notes, making audio and video tapes, taking photographs, and conducting interviews with the subjects in their own language. Such data allow the researcher to analyze subjects' attentiveness to and comfort level with materials and procedures in learning tasks. These data are valuable in helping explain why subjects performed well or poorly.

Combining qualitative and quantitative research methods

In my study, The Effect of Media Choice on English Literacy Acquisition for Preliterate Adult Hmong Learners, I combined qualitative and quantitative methods, to examine media choice and the effects of three kinds of media (video, photographs, and live teacher demonstrations with real objects) on English literacy acquisition for 37 Hmong adults enrolled in ESL classes. Examples of the observational data are included in the appendix of this study.

Findings

The quantitative data from the study (see Appendix A-1), when interpreted separately from the qualitative date, were not impressive. Analysis of Covariance (ANCOVA) showed that subjects' pre-instruction scores on the literacy section of the Washington State Adult Refugee Project ESL Oral Placement Test strongly related to their performance on the post-instruction literacy achievement test. When pre-instruction literacy was used as a control variable in subsequent analyses of the data, choice of instruction media (subject's own selection of instructional media, rather than assignment to media by the teacher) had no significant effect on English literacy acquisition. Other variables which did not significantly affect English literacy acquisition were: the match between subjects' preferred perceptual modes and the characteristics of instructional media which appeared to appeal to these modes, amount of previous formal ESL instruction, and the subject's age and sex.

However, observational data, in combination with subjects' achievement test mean scores, yielded surprising results. For subjects who were familiar with these media, bilingual video and colored photos (in combination with flash cards) were more effective than teacher demonstrations in promoting English literacy acquisition. These findings showed that the prevailing use of live teacher demonstrations in the instruction of nonliterate second language literacy learners (Green and Reder, 1986; Weinstein, 1984, 1986; Reder, 1982, 1984; and Robson, 1982) may successfully promote their speaking and listening skills, but actually inhibit their acquisition of literacy skills.

Observational data (see Appendix A-3) and photos showed that subjects were distracted from attention to the flashcards and the task of linking written language on the flashcards with the sounds of the words and meanings being conveyed by the objects and actions being demonstrated. Instead, they focused on the aspects of the communication situation which would predictably engage individuals from an oral tradition culture: nonverbal signals from the teacher, the teacher's clothing, and the social setting of the classroom. Subjects appeared overloaded with verbal and nonverbal information, making attentiveness to literacy nearly impossible.

The non-pictorial, bilingual video tape, reduced personal distractions and focused learners on the connection between speech and writing. The use of

translation supplied the learners with instant understanding of the meaning of each sentence. The photographs, although not appealing to learners because of the use of disembodied hands holding objects, also focused learners' attention on the link between the written word, the sound of the words and meaning.

Other strong influences on subjects' English literacy acquisition in this study were their familiarity with technologies and symbolic codes of media used in instruction (photographs, television, and flash cards), and their understanding of how their instructional activities related to acquisition of English literacy. Analysis of audio tapes indicated that, despite repeated explanations of the study through Hmong translators, subjects regarded this experience as a new kind of ESL class. They repeatedly questioned how these activities related to learning English. Not only did subjects not have a good understanding of the culture of school, they had no understanding (How could they?) of the concept of an educational experiment.

Implications

Without the observational data from this study, we might never have known why the teacher demonstrations were not successful in promoting literacy. We might have speculated about the rapport between the teacher and the subjects or have focused our attention on subjects' lack of familiarity with some of the objects used in the teacher demonstrations. However, the data did provide us with valuable information about the effect of such demonstrations on attentiveness to the target information in the lesson: English in written form.

Other data collected provided valuable information about the reaction of this group of Hmong subjects to standard procedures used in formal research. They found formal test booklets strange and puzzling. They felt a need to discuss the instructions given by the interpreter before proceeding with any task. They became anxious during one-to-one interviews conducted in private, but were quite comfortable being interviewed in the midst of a noisy background with many distractions. Finally, they were bemused at the idea of being asked about their preferences for different learning experiences in light of their recent years of taking orders from others in refugee camps and welfare offices.

Recommendations for research colleagues

Contributions to Cross-Cultural Methods of Educational Research

My study demonstrated the importance of addressing the cultural and conceptual gaps between the assumptions and procedures of modern, Western educational research and subjects from non-Western, non-technological cultures in the design and procedures of the study, in the kinds of data collected, and in the analysis of the data.

As already indicated, a principal lesson learned from this study is that test scores cannot give a complete picture of what subjects from a different culture know

about the subject matter being tested. When conducting studies using subjects such as the Hmong, who have no formal education and no context for understanding educational experiments, the researcher must build into the research design several ways to determine what subjects understand about their tasks.

Recommendations for Procedures in Cross-Cultural Educational Research

The data from this study suggest some specific recommendations for educational researchers intending to work with populations from cultures who are not familiar with Western educational practices. A number of these recommendations apply to classroom-based research some of the general guidelines found in Handbook of Cross-Cultural Psychology edited by Triandis and Berry (1980):

1. Supplement written information about the subjects' culture with interviews of cultural informants and participant observations. Accurate cultural information is essential in planning activities of cross-cultural studies and in interpreting the data. The researcher's contacts with the Hmong community in Seattle, observations of preliterate Hmong adults in classroom and social settings, and discussions with cultural informants provided valuable background information for analyzing written information about the culture. The researcher's direct experience with the culture also contributed to selection of translators, planning the activities of the study, decisions about procedural changes during the study, and analysis of the data.

2. Conduct a pilot study with individuals from the target culture. Since the validity of findings from cross-cultural studies depends on subjects' understanding of their tasks, it is essential to determine how procedures or materials must be altered to increase subjects' understanding of the activities required of them. Some planned activities may be eliminated or substantially changed as a result of the pilot study.

In this study, the procedures for giving the Kerby Learning Modality Test were altered, the interview settings were restructured, the instructional sessions were shortened, and the video recordings of data were eliminated as a result of the pilot study. On the other hand, the pilot study supported the appropriateness of media selected for the instructional sessions, usability of the tests, criteria used for selecting translators, and procedures established for interviewing subjects.

3. Determine how subjects view their participation in the study and anticipate a high number of noncompleters. The gap between the researcher's and subjects' expectations for participation first became apparent in the review of the Human Subjects assent form. Since this was a new experience for the preliterate Hmong subjects, they had no cultural context for understanding their roles as participants in an educational study. The fact that they did not understand how their participation in this study differed from their participation in ordinary English as a

Second Language (ESL) classes became clear in their discussions with the translators while the Human Subjects Assent/Consent forms were being completed.

A review of the audio tape of the study indicates that the Hmong subjects were confused by the legalistic wording of the consent form when it was translated into Hmong and did not know why they needed to sign it. They asked one translator, "What's this thing all about? Why do we have to sign it?" The translator then had to re-explain the idea of an experimental study, the form, and its wording before the subjects understood.

The translators explained carefully the necessity of subjects being present all four days of the study and offered an opportunity for subjects to drop out of the study if they could not be present. As a cross-check of their understanding, the translators consulted with individual participants before co-signing the assent form. None of the subjects dropped out or asked for clarification of the need for their presence.

Sixteen of the fifty-four subjects who began the study did not complete the activities due to absences. Reasons for absences included transportation problems and preplanned family events. One of these events was the wedding of a female subject's daughter to a young man who arrived in Spokane with a large group of Hmong refugees just released from the camps in the Philippines.

The commitment of the potential subjects to the study on the day that they were asked and their later failure to keep the commitment reflect the continual cross-cultural tension between the orientation of traditional Hmong culture to be present and the emphasis of American culture on the future. Despite their intentions to participate in the study activities as outlined, the participants had priorities in their lives which subsequently affected their ability to fulfill their promise to participate all four days. Because they did not understand the effect of their absences on the study, they felt no need to inform the researcher or the translators when they discovered that they could not be present all four days. Their behavior may also have been affected by their feeling of lack of control over events in their lives due to their experiences with war, refugee camps, and relocation.

4. Check the reliability of translators' messages to subjects. Involvement of translators and cultural informants does not insure that subjects understand what to do. Translators who do not understand the importance of consistency and clarity in explanations and procedures can contribute to inaccurate outcomes on tests and interviews. Such was the case with interviews performed by one translator used in this study. Although all translators were briefed on the procedures of the study, one translator had to have the assent/consent form and interview questions re-explained to him by the teacher-researcher when the potential Hmong subjects started asking questions.

Differences in social class and clan membership can also interfere with communication between subjects and translators. In this study, translators were either from the same Hmong clan as the subjects or from a clan which was friendly

to their clan. Since some Hmong clans have carried to the United States the legacy of their hundreds of years of animosity towards each other, attention to clan membership of the translators was essential to insure the participation of available subjects (as in the Spokane situation) and to insure comfortable and accurate communication between translators and subjects.

Finally, translators cannot always be relied upon to provide the researcher with an accurate report on subjects' understanding of their task. It is in the interest of paid translators to have the researcher believe the subjects understand what is going on and that they have made the procedures clear to the subjects. It is, therefore, critical to have audio or video tapes of the study checked by another translator (as was done in this study) for accuracy of translation and consistency of procedure.

5. Accommodate cultural patterns in procedures of the study. Many of the procedures of Western educational research are antagonistic to the social patterns of some of the more traditional cultures. Cibrowski (1980) and other cross-cultural researchers have demonstrated that rigid adherence to Western experimental research procedures and materials when they clearly impede the performance of subjects yields studies with results of questionable validity.

In this study, the teacher-researcher combined her knowledge of Hmong culture and previous experiences of this refugee population, the information from her pilot study of ten Hmong participants in Fresno, her constant observations of the behavior of the subjects, and continuous feedback from the interpreters and cultural informants assisting with the study to make systematic adjustments in procedures which interfered with subjects' performances.

One adjustment made was in the settings for the pre-instruction and post-instruction interviews and tests of the subjects. Good research procedures normally dictate a quiet, non-distracting setting for one-to-one activities such as these. However, once the researcher became aware that quiet, isolated settings were uncomfortable for the subjects, the activities were moved so that subjects could be near the larger group.

Another accommodation was made in the administration of the Kerby Learning Modality Test. Subjects were allowed time to clarify test directions in discussion among themselves after the researcher and translator had given the directions. This was an accommodation to the collaborative learning style of the Hmong.

Throughout the study, the researcher and translator allowed friends, classmates, and family members to come and go from the area where the activities of the study were being conducted. The distractions that such interaction might have caused were offset by the comfort of subjects in the research setting.

6. Verify the subjects' familiarity with media used in the study. This study demonstrated that subjects' familiarity with media affect both the way they respond to instructional and testing situations which involve media and what they

understand and learn from these educational activities. Subjects focused on different aspects of language when they were instructed through teacher demonstrations than they did when instructed with bilingual video tape. Yet the intention of the instructor in both situations was to promote English literacy acquisition.

7. Contextualize quantifiable outcomes with the ethnographic data collected during the study. Without some explanations for why subjects performed as they did on tests and interviews in a cross-cultural educational study, their scores on the tests and interviews in a cross-cultural educational study, their scores on the tests and interviews are of little value. Without ethnographic data, the researcher could not have determined if subjects understood their task, were uncomfortable with the examiner or translator, or found the materials used in the study entirely foreign. In order to obtain a complete picture of subjects' performance, provisions must be made for collecting data on the subjects' behavior through observation notes, photos, audio tapes, and/or video tapes.

Ethnographic data in this study provided information about the Hmong subjects' interaction with media which no test scores could have provided. The effect of physical setting, the comfort level for activity and background noise, the optimal group size, and the subjects' responses to translators were factors which affected the subjects' performances on tests and interviews. Data from participant observation field notes on these factors helped the researcher understand such unanticipated subject behavior as their distaste for the photos presented. Observation data also helped explain why the bilingual video tape and flash card-photo combination were effective in promoting literacy achievement and why the teacher demonstrations were not. Audio tapes of the activities allowed for an independent check on subjects' understanding of their task and the translators' reliability.

Photos provided another opportunity to gain insight into the subjects' level of comfort in the study setting, their attentiveness, and their way of relating to each other during the activities of the study. Photos also complemented descriptions of the physical settings given in the participant-observer's notes.

Future Directions for Research on ESL Literacy

In order to gain more information about the role of learner choice in the effectiveness of instructional media, this study should be replicated with a large enough group of Hmong subjects to insure that there is a selection and assignment group for each medium used. Only then will it be clear whether learners with no formal schooling understand themselves as learners well enough to choose media that promote their acquisition of second language literacy.

Instruments need to be developed which can accurately measure the preferred perceptual modes and other aspects of the learning style of preliterate adults such

as the Hmong subjects in this study. Instruments presently available for measuring learning styles of adults require that the examinees be able to read. The few instruments which do not require reading, such as the Kerby Learning Modality Test used in this study, have been normed on young children.

Additional ethnographic research needs to be done which focuses on the behavior of preliterate and illiterate adults engaged in the literacy acquisition process. Research to date has given only partial answers (i.e., they need instruction which clearly links speech and writing) to queries about the best mode of instruction. One area worth investigating is the appropriate level of context for literacy instruction, how much is needed to help learners understand meaning, and how much context distracts them from their task of acquiring literacy.

Implications for Research on ESL Populations

This study illustrates why responsible educational research on culturally different populations must combine ethnographic data with quantifiable data obtained through classic experimental methods. These data must be integrated to provide a complete, accurate portrayal of what learners are doing. Without an understanding of how and why learners behave in certain ways, meaningful instructional accommodations cannot be made to their individual or cultural differences. Such accommodations are essential if learners of different cultures are to achieve learning outcomes that accurately reflect their cognitive abilities.

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Appendix A-1

Tables Displaying Quantitative Data

TABLE 1

Mean Scores on the Preinstruction Literacy Test (WSARPESLOPT) by Choice (Selected/Assigned) and Instructional Medium (Video, Photos, Live Demonstrations)

MEDIA	n	VIDEO	PHOTOS	LIVE DEMO	ALL
Selected	20[a]	M 19.44 SD 2.45 (9)	---- (0)[b]	M 17.18 SD 5.88 (11)	M 18.20 SD 4.69 (20)
Assigned	12	M 17.20 SD 3.83 (5)	M 16.57 SD 6.60 (7)	---- (0)[c]	M 16.83 SD 5.41 (12)
None	5	M 15.00 SD 7.41 (5)			
Total	37				M 17.32 SD 5.29 (37)

a The maximum score on the Literacy Section of the Washington State Adult Refugee Project ESL Oral Placement Test is 40 points. Subjects in this study scored below 25.

b No subjects chose this medium.

c Subjects randomly assigned to this medium had selected it.

TABLE 2

Range of Scores on WSARPESLOPT by Medium and Choice

GROUP	n	MIN	MAX	n	MIN	MAX
Select		01[a]	24	Asgn	02	22
Video	9	15	22	5	11	20
Photos	--	--	--	7	02	22
Live Demo	11	01	24	--	--	--
No Media	--	--	--	5	02	20
Total	**20**	**01**	**22**	**17**	**02**	**22**

a The maximum score on the Literacy Section of the Washington State Adult Refugee Project ESL Oral Placement Test is 40 points. Subjects in this study scored below 25.

TABLE 3

Postinstruction English Literacy Achievement Test Scores by Choice (Selected/Assigned) to Media with the Covariate Preinstruction Literacy in English (Liter)

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F-RATIO
Covariate				
Liter	14745.74	1	14745.74	27.92***
Choice	245.27	1	245.27	.50
Explained	14991.01	2	7495.50	14.19***
Residual	15317.98	29	528.21	
Total	30308.99	31[a]	977.71	

a $n = 32$ The five participants who did not use media were not included in this analysis.

*** $p < .001$

TABLE 4

Mean Scores on Postinstruction Achievement Test by Choice (Selected/Assigned) and Media used in Instructional Sessions (Video, Photos, Live Demonstrations)

MEDIA	n	VIDEO	PHOTOS	LIVE DEMO	ALL
CHOICE:					
Selected	20[a]	M 53.38 SD 36.75 (9)	---- (0)[b]	M 36.09 SD 27.99 (11)	M 43.87 SD 32.00
Assigned	12	M 30.80 SD 27.84 (5)	M 52.57 SD 30.82 (7)	---- ---- (0)[c]	M 43.50 SD 30.42
None	5	M 7.40 SD 15.99			
Total	37				M 38.82 SD 32.07

a The number of subjects in each treatment group is given in parentheses.
b No subjects chose this medium.
c Subjects randomly assigned to this medium had selected it in their preinstruction interviews.

TABLE 5

Range of Scores on the Postinstruction Achievement Test

GROUP	n	MIN	MAX	n	MIN	MAX
Select	20	01	95	Asgn	01	95
Video	9	01	94.5	5	02	68
Photos	--	--	--	7	01	95
Live Demo	11	01	95	--	--	--
None	--	--	--	--	00	36
Total	**20**	**01**	**95**	**12**	**00**	**95**

TABLE 6

Experience of Hmong Participants Using Audio and/or Video Tape (Reported in Years) for Each Media Treatment Group

MEDIA	n	VIDEO	PHOTOS	LIVE DEMO	ALL
CHOICE:					
Selected	20	M 9.94 SD 9.54 (9)[a]	---- (0)[b]	M 7.34 SD 8.69 (11)	M 8.51 SD 8.94
Assigned	12	M 2.30 SD 2.17 (5)	M 3.67 SD 3.16 (7)	---- ---- (0)[c]	M 3.10 SD 2.77
None	5	M 8.24 SD 12.59			
Total	37				M 6.72 SD 8.28

a The number of subjects in each treatment group is given in parentheses.
b No subjects chose this medium.
c Subjects randomly assigned to this medium had selected it.

TABLE 7

Range of Years of Experience Using Audio and/or Video Tape for Subjects in Each Media Treatment Group

GROUP	n	MINIMUM	MAXIMUM
Video	14	.70	25.00
Photos	7	.20	8.00
Live Demo	11	.00	15.00
None	5	.00	30.00
Total	**37**	**.00**	**30.00**

TABLE 8

Experience Using Audio and/or Video Tape for Subjects Who Selected or Were Assigned to Instructional Media

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F-RATIO
Choice	219.51	1	219.51	4.11*
Residual	1601.42	30	53.38	
Total	**1820.93**	**31[a]**	**58.74**	

[a] n = 32 The five participants who were not offered instruction through media were not included in this analysis.

* $p < .05$

TABLE 9

Mean Scores for the Auditory, Visual, and Kinesthetic Subsections of the Kerby Learning Modality Test (KLMT) by Selection or Assignment to Media

	AUDIT		VISUAL		KINES		
SELECT	M	7.12[a]	M	9.77[b]	M	7.62[c]	20
	SD	1.23	SD	2.64	SD	1.88	
ASSIGNED	M	6.68	M	10.58	M	7.31	12
	SD	.99	SD	3.53	SD	1.52	
TOTAL	M	6.96	M	10.08	M	7.51	32
	SD	1.15	SD	2.97	SD	1.73	
VIDEO	M	7.16	M	10.62	M	7.07	14
	SD	1.00	SD	1.50	SD	2.06	
PHOTOS	M	6.57	M	9.94	M	7.38	7
	SD	.87	SD	4.50	SD	1.15	
LIVE DEMO	M	6.94	M	9.47	M	8.13	11
	SD	1.48	SD	3.39	SD	1.50	
TOTAL	M	6.96	M	10.08	M	7.51	32
	SD	1.15	SD	2.97	SD	1.73	

a Maximum possible M = 10 for the 4 part Auditory section
b Maximum possible M = 15 for the 4 part Visual section
c Maximum possible M = 10 for the 2 part Kinesthetic section (Auditory Motor Coordination and Visual Motor Coordination)

TABLE 10

Range of Subjects' Scores of Subsections of the KLMT

	AUDIO		VISUAL		KINES	
	Min	Max	Min	Max	Min	Max
Select	4.00	8.70[a]	0.00	12.70[b]	3.00	10.00c
Assigned	5.50	8.50	0.00	13.00	4.50	10.00
Total	**4.00**	**8.70**	**0.00**	**13.00**	**3.00**	**10.00**
Video	5.50	8.70	8.00	13.00	3.00	10.00
Photos	5.70	8.20	0.00	13.00	5.00	8.50
Live Demo	4.00	8.70	0.00	12.20	5.00	10.00
Total	**4.00**	**8.70**	**0.00**	**13.00**	**3.00**	**10.00**

a Maximum possible M = 10 for the 4 part Auditory section
b Maximum possible M = 15 for the 4 part Visual section
c Maximum possible M = 10 for the 2 part Kinesthetic section (Auditory Motor Coordination and Visual Motor Coordination)

TABLE 11

Postinstruction Achievement Tests in English (Achi) by Medium used in learning Sessions (Media) with the Covariate Preinstruction literacy in English (Liter)

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F-RATIO
Literacy	15161.17	1	15161.17	28.04**
Media	4575.86	3	1525.29	2.82*
Explained	19737.03	4	4934.26	9.12**
Residual	17304.08	32	540.752	
Total	**37041.11**	**36**	**1028.92**	

* $p < .05$
** $p < .01$

TABLE 12

Satisfaction with the Helpfulness of Media for Acquiring Literacy by Selection or Assignment to Media

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F-RATIO
Between Groups	24.25	1	24.25	6.44*
Within Groups	109.10	29		
Total	**133.35**	**30[a]**		

a $n = 31$. One subject in the teacher demonstration group did not complete the postinstruction interview. The five Non-participants were not given the interview.
* $p < .05$

TABLE 13

Satisfaction with the Helpfulness of Media for Acquiring Literacy by Selection or Assignment to Media

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARES	F-RATIO
Between Groups	37.18	2	18.59	5.41**
Within Groups	96.17	28	3.43	
Total	**133.35**	**30[a]**		

a $n = 31$. One subject in the teacher demonstration group did not complete the postinstruction interview. The five Non-participants were not given the interview.

** $p < .01$

TABLE 14

Mean Scores for Satisfaction and Achievement

GROUP	SATIS	n	ACHIEVEMENT	n
ALL	M 6.61 SD 2.11	31[a]	M 38.82 SD 32.08	32[b]
SELECT	M 7.31 SD 1.89	19[a]	M 43.87 SD 32.54	20
ASSIGNED	M 5.50 SD 2.02	12	M 43.50 SD 30.42	12
VIDEO	M 5.86 SD 2.25	14	M 45.32 SD	14
PHOTOS	M 5.86 SD 1.86	7	M 52.57 SD 30.82	7
LIVE DEMO	M 8.20 SD 1.03	10a	M 36.09 SD 28.00	11

a $n = 31$. One subject in the teacher-demonstration group did not complete the postinstruction interview. The five nonparticipants were not given the interview.

b $n = 32$. The five nonparticipants did not take the KLMT.

TABLE 15

Range of Postinstruction Interview and Achievement Test Scores for Each Media Treatment Group

GROUP	SATIS		ACHI	
	Minimum	Maximum	Minimum	Maximum
Select	4.00	9.00	01	95
Assigned	3.00	9.00	01	94.5
Total	**3.00**	**9.00**	**01**	**95**
Video	3.00	9.00	01	94.5
Photos	3.00	9.00	01	95
Live Demo	6.00	9.00	01	95
Total	**3.00**	**9.00**	**01**	**95**

p = 32. The five nonparticipants did not take the KLMT.

TABLE 16

Correlation of Learners' Characteristics with Achievement

	LITER	ACHI	AGE	SEX	LAND TRNG
LITER	1.00	.70***	-.37*	-.08	.27
ACHI	.70***	1.00	-.26	.12	.12
AGE	-.37	-.26	1.00	-.35*	-.05
SEX	-.09	.12	-.35*	1.00	-.15
LANG TRNG	.27	.12	-.05	-.15	1.00

* $p < .05$
** $p < .01$
*** $p < .001$

TABLE 17

Postinstruction Interview Scores (Satisfaction) by Location

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F-RATIO
Between Groups	62.15	4	15.43	5.67**
Within Groups	71.20	26	2.74	
Total	133.35	30		

** $p < .01$

TABLE 18

Mean Scores for Postinstruction Interviews and Achievement Test Scores by Location of Study Site

LOCATION	n	SATISFACTION		ACHIEVEMENT	
EAC	10	M SD	4.80 1.75	M SD	40.00 38.53
PRES	6[a]	M SD	8.80 .45	M SD	54.00 25.55
WESL	9	M SD	7.00 1.50	M SD	22.66 20.56
MEN	2	M SD	8.00 1.41	M SD	68.50 17.68
SPOK	5	M SD	6.80 2.39	M SD	66.90 18.10
TOTAL	32[a]	M SD	6.61 2.11	M SD	43.73 31.27

a The subjects in this site who scored lowest on the achievement test (35) did not appear for the postinstruction interview.

Appendix A-2

Sample of Translated Documents
(Post-instruction Interview)

LUS NUG TXOG TXOJ KEV KAWM DLAW LOS

NUMBER # LUB NPE

Lub tswv yim kawm lus los ntawm Kaerby Modality test los:

1. Raws lis 4 lub sij hawm koj siv los sim kawm lus dhau los no, koj tau siv txoj kev kawm lus twg los lawm (xws lis video tape, duab, kawm ntxuag tus xib hwb thiab phau ntawv).

2. Koj nyiam siv txoj kev kawm lus ( ) npaum li cas?.

   a. Nyiam heev
   b. Me ntsis xwb
   c. Tsis pom yuav pab tau li

3. Koj xav hais tias txoj kev kawm no ( ) pab kom koj kawm tau lus npaum li cas?.

   a. Pab zoo
   b. Pab tej tsam
   c. Tsis pab li

4. Koj xav kawm lus raus li tsoj kev kawm no mus ntxiv li cas?

   a. Kawm nraim
   b. Tej tsam los tej lub sij hawm xwb
   c. Tsis kawm ntxiv li

5. Txoj kev twg yog txoj koj nyiam coj los siv kawm dua, yog koj yuav tsum raug ua tus xaiv?.

6. Muaj yam dab tsi ua kom koj nyiam txoj kev kawm lus raws li ( )?

7. Muaj yam dab tsi ua kom koj tsi nyiam txoj kev kawm lus raws li ( )?

8. Koj puas xav hais tias tseem muaj lwm txoj kev kawm lus ua koj yuav nyiam dua cov koj tau xaiv kawm los no?

Post instruction interview of subject

Subject #: Name:

Perceptual mode identified by the Kerby modality test:

1. Which medium did you use during the last four learning sessions (video tape, photographs, live teacher with real objects)?

2. How did you like using the (name of medium) to learn (English

   a. a lot
   b. some
   c. didn't help

3. How much does working with (medium) help your literacy skills in (English or Japanese)?

   a. usually helps
   b. sometimes helps
   c. doesn't help

4. How often would you like to continue working with (medium) in your language class?

   a = often (e.g. daily)
   b = sometimes
   c = never

5. Which medium would you prefer to work with, if you could choose again?

6. What did you like about working with (medium)?

7. What didn't you like about working with the (medium)?

8. Do you think you would have enjoyed working with a different medium more than with (medium selected)?

Appendix A-3

Sample of Observation Notes

apologies for the interruption. One woman has a baby with her throughout the hour. She hands the baby to someone else if she needs her hands free to mark a page or handle flashcards. Before the lesson is over, several more women leave to cook for the school potluck.

February 11, 1987

Episcopal Asian Center

Joanna, who teaches the advanced ESL class, asks me to come into her class this morning and explain to them what I am doing with the study. She thinks it will satisfy their curiousity as well as provide a good listening comprehension experience. The students ask some good questions about my activities and are happy that I am interested in how Hmong learn English literacy. They are concerned about why some of their people are learning so slowly.

Once again, we have problems with the video portion of the video treatment. Lilly uses flashcards and keeps pace with the audio track. The students don't seem to mind that this video monitor isn't working. They don't have video as a regular part of their ESL instruction, so this is a novelty.

We begin the achievement testing today. The people who have not received any treatment are tested first. They still react to the flashcards as collections of individual letters, rather than as words. Many simply say "I don't know" when shown a card. Some select letters at random from the cards and name them. A few spell out the words.

The students who have had the video or photograph treatment respond to the words on the flashcards as whole entitities. Some are clearly utilizing auditory memory in responding to the words rather than actually reading. When they recognize, for example, the word "Write," they say "Write your name," even if the card says "Write your name on the paper." Word boundaries and forms of written expression are clearly not well recognized. Students are responding the gist of what they recall to be on the cards rather than the forms they actually see before them.

Print style seems very important to these people. Although every effort is made to keep the letters consistent--all capitals written in the same hand and of the same size, the smallest changes such as a slant in print causes consternation. This attention to detail is seen in the fine embroidery work of the Hmong women. It may be this very thing that works against them when they try to read. They are so focused on letters that they have trouble shifting their attention to the shape of whole words, then sentences, and so forth.

Private testing is not possible and may not even be desirable. Students seem sufficiently nervous in a one-to-one testing encounter to not need the added stress of isolation. They seem comfortable having other students hang around and look over their shoulders. There seems to be no carry over from the casual observation the testing situation to success in the achievement test. Those who look on as I test their classmates do no better on the achievement test than those who don't see the test ahead of time.

I find that confidence is a factor in completing the achievement test. When some of the students say "I don't know", I say "Yes, you do know".

Many of them make a second, usually successful, try after this challenge.

Wesley United

I am becoming adept at diagnosing video problems and fixing them. I bring in a new video cable to connect the player and monitor and get the tape to play beautifully. The video treatment group continues to be more attentive than the live teacher demonstration group. Today a woman's baby is brought in from the daycare room near the end of the learning session that I am conducting. The young Hmong woman simply says "Her baby needs changing." The mother finishes reciting the particular item on the flashcard, picks up her baby and leaves. The woman who brought in the baby is annoyed that the mother even dealyed long enough to finish reciting.

We take some pictures today. Again, my automatic camera is of interest to several of the students.

Mennonite

Optimal group size for attentiveness of Hmong to a literacy lesson seems to be two people. The two women have no trouble focusing on the lesson. They do not visit and socialize while the lesson is in progress as usually happens when I have three women or a combination of males and females.

The two women who have had learning sessions score reasonable well on the achievement test. The 54 year old gets 56%. The forty-eight year old gets 48%. The two students who did not receive treatment can't successfully complete any of the items.

I learn very quickly that testing the women in an isolated situation is a mistake. The teacher suggests that I give the final literacy achievement tests to individuals in the office next door while Her does the post-experimental interview. I take one of the women in the "no treatment" group there and test her, but she is very nervous. I take her back to the room and determine to test in one corner of the room while Her tests in another. (I am later reminded of the traumatic experiences the Hmong have had related to interviews in private rooms. They were interrogated in their own country and they had to get through immigration interviews to come here.)

Her has very good rapport with the women in the post-experimental interviews. He learns that two women are fairly satisfied with the photo treatment I have given, even though they did not choose it. They have no preference for media of instruction in the future. It is important to note that neither audio or video media is used in their ESL class. Everything is live teacher demonstration.

We take pictures with the students' permission. They look very pleased to be photographed. They also tell Her that they are sorry we won't be returning. (I am not sure the teacher shares their feelings. She has let us know nonverbally that we were an intrusion on her little class.)

First Presbyterian

Lilly informs me earlier in the day that she will not be available for the last day of the study. She brings Lang, a middle aged Hmong man, to

meet me and to learn about the procedures I am using. He will be my translator all day tomorrow.

I continue with the live teacher demonstration for the students in treatment groups. The no treatment group students show up at the beginning of the hour and have to be returned to class. An English-speaking aide offers to help me with forms and tests for a couple of students who have been absent for one day of this study.

February 12, 1987

Episcopal Asian Center

With Lang's help, I complete the literacy tests and post-experimental interviews with this group. The testing has to be done in the reception area because the daycare area is being used by a volunteer who is working with a group from one of the classes. Friends and other students are continually hanging around and observing.

Testing the woman with twin boys is particularly difficult. In the midst of the test, the boys come right to their mother's side and start fighting with each other. Having observed the way Hmong mothers handle these situations, I decide that it will be more upsetting to her if I stop the test than if I just continue the activity. I choose to continue the test. It isn't easy for either of us! Lang calmly conducts his interviews in the midst of this chaos. I take some final pcitures and record some of the post-experimental interviews and achievement tests. We finally say our thank you's and goodbyes.

Wesley United

It is pouring rain this morning. Attendance at Weslely United reflects the difficulty and unpleasantness involved in gettinga round on public transportation in this weather. I lose some subjects from the study on this last day. Most, interestingly, are from the no treatment group.

Lia, the bilingual aide who has helped us the last two days, provides invaluable assistance in getting through all the activities we must complete today. First he manages the video group for the last learning trial while I conduct the live teacher demonstration. Then he assists Lang in conducting the post experimental interviews and the Hmong translation portion of the achievement test. Again, the "no treatment" group behaves quite differently towards words than those who have had weither the video sessions or the live teacher demonstration.

Neither the selection nor the assignment group show a high degree of satisfaction with the learning sessions they have had. Scores are "2" or "3"out of 10. The highest score on the achievement test is "68". Most score below "30". On a couple of test papers Vang and Lia write "She can spell, but she can't read."

First Presbyterian

I conduct the final learning session here before Lang and I conduct the achievement tests and post-experimental interviews. A large number of people are absent. The water at some bus stops is ankle deep by this point in the day. Fresno's sewer system doesn't seem able to handle such heavy rain. All of the subjects in my no treatment group are absent. Two from my treatment groups are also absent.

The English speaking volunteer who helped me do some testing yesterday casually mentions that one woman who is having trouble with the achievement test has dyslexia. She is surprised that the teacher didn't tell me. I had observed that something seemed wrong with this woman, but didn't know what.

Student at this site score 30-50% on the achievement test. They have low satisfaction with the media they used.

I take some pictures of Lang and thank him for his help. He is exhausted (as am I). We've worked very hard since 8:30 a.m.

The data collection in Fresno is now complete.

Appendix A-4

Sample Drawing by Hmong Subject

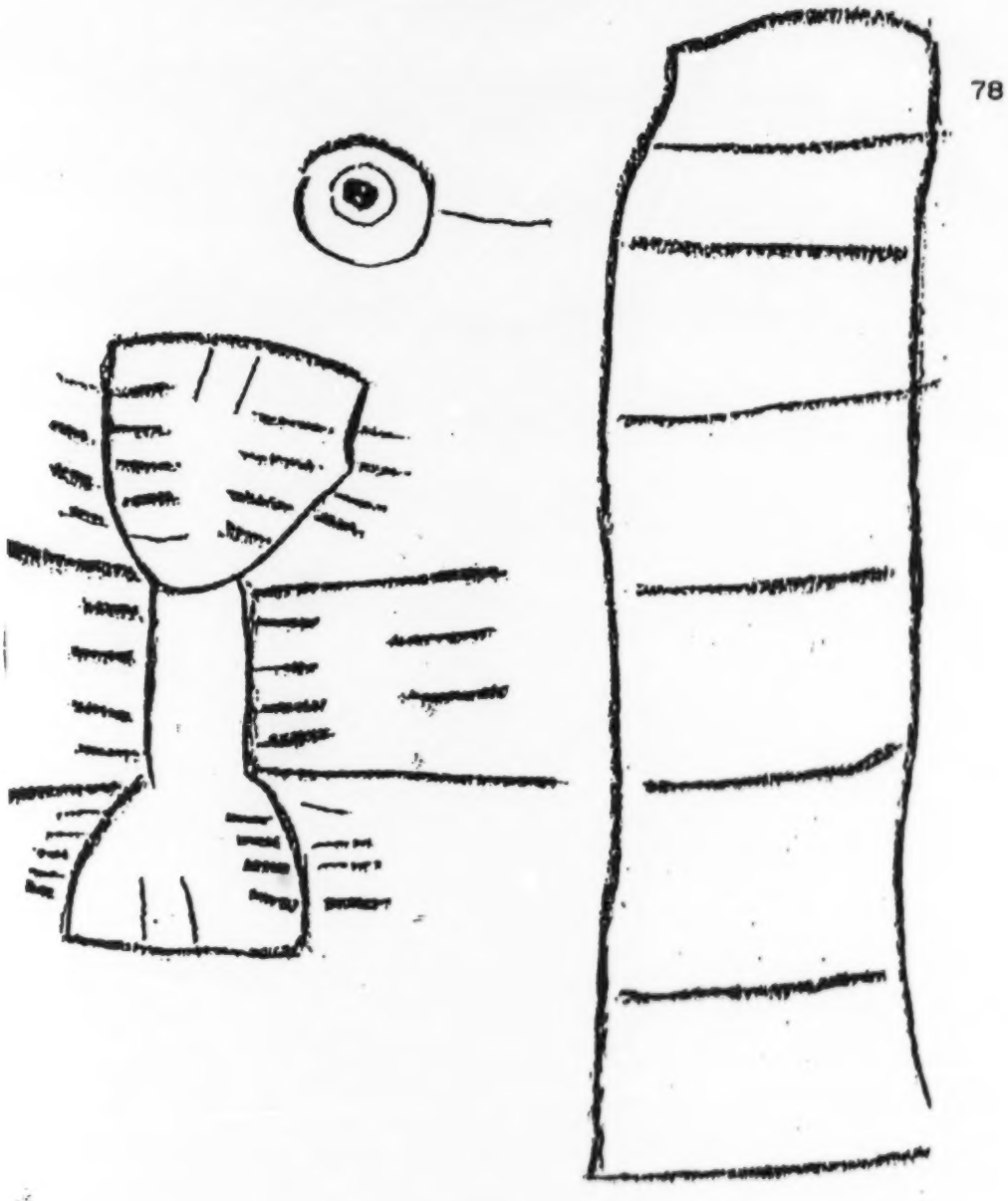

Figure 1

A Mien Woman's Drawing

Note. Drawing produced by an ESL student at Tacoma Community House, Tacoma, WA. From "Refugees and acculturation: A framework for teaching culture in the ESL classroom" by K. L. Holloway, 1990. Unpublished master's thesis, School for International Training, Brattleboro, VT. Reprinted by permission.